

REMARKS

Claims 3-9, 11-15, 18-24, 26-30, 33-39, and 41-45 are pending in this Application. Applicants have amended claims 3, 5-7, 15, 18, 20-22, 30, 33, 35-37, and 45 to define the claimed invention more particularly.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 3-9, 11-15, 18-24, and 26-30 stand rejected under 35 U.S.C. 101. Claims 3-5, 7-9, 11-15, 18-20, 22-2, 26-30, 33-35, 37-39, and 41-45 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out the invention. Applicants have amended the claims to address the Examiner's concerns.

Claims 3-9, 12, 13, 15, 18-24, 27, 28, 30, 33-39, 42, 43, and 45 stand rejected under 35 U.S.C. §103(a) as being unpatentable over ANSI/IEEE std.802.1D, 1998 Edition (hereinafter "the 802.1D specification") in view of Williams et al. (US Patent No. 6,515,993, hereinafter "Williams"). Claims 11, 14, 26, 29, 41, and 44 stand rejected under U.S.C. §103(a) as being unpatentable over the 802.1D specification in view of Williams and further in view of Liu et al. (US 2002/0191628, hereinafter "Liu").

Applicants respectfully traverse these rejections in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by exemplary claim 3) is directed to a network system for a network having plural nodes connected.

A node belonging to the network system includes a learning frame management unit which refers to a source media access control address (MAC SA) table cache to determine whether a learning frame transmission request of a MAC SA has been made, a MAC forwarding table memory which stores an output port for a destination MAC address and tag destination MAC address assigned by the learning frame management unit, and the MAC SA table cache which stores the MAC SA which has made a learning frame transmission request.

In a conventional learning bridge network, as described in the Background of the

present Application, a learning process enters a port which has received the frame and a MAC SA of the frame in a filtering database so to determine a transfer destination port of the frame. In this system, a learning process does not operate when a node through which a flow passes depending on a direction allows a different asymmetrical flow. Thus, the frame reaches the destination but is also transferred to unnecessary destinations. Therefore, the network becomes busy and the bandwidth usability reduces (e.g., see Application at page 2, line 24 – page 3, line 6).

The claimed invention, however, provides a network having plural nodes connected, wherein a node belonging to the network is provided with a learning frame management unit which refers to a MAC SA table cache to determine whether a learning frame transmission request is made or not, a MAC forwarding table memory which stores an output port for a destination MAC address and tag destination MAC address assigned by the learning frame management unit, and a MAC SA table cache which stores the source MAC address (MAC SA) which has made a learning frame transmission request (e.g., see Application at page 4, lines 8-16, page 22, lines 24-27).

The invention assigns a VLAN tag for every destination address. For example, when communicating between a subscriber (A) and ISP (B), the tag corresponding to the subscriber (A) of an address is added to the frame transmitted to a subscriber (A) from ISP (B), and the tag corresponding to ISP (B) of an address is added to the frame transmitted to ISP (B) from a subscriber (A).

For this reason, it is necessary to determine the tag which should be added on a destination MAC address. That is, mapping between a destination MAC address and a tag is needed. Therefore, the invention creates the mapping table (MAC forwarding table memory) of a destination MAC address and the tag which should be added by transmitting a learning frame so that such mapping can be performed automatically.

This feature is important because even when the asymmetrical flow is flown by sending the learning frame through a path opposite to the path where the main signal frame flows, the learning process can be functioned, the network congestion can be remedied from becoming congestion, and the bandwidth usability can be improved (e.g., see Application at page 113, lines 13-18).

II. 35 U.S.C. 101 REJECTION

In rejecting claims 3-9, 11-15, 18-24, and 26-30, the Examiner alleges that the claims are directed to non-statutory subject matter.

Applicants amended claims 5-7, and 20-22 to recite, “computer-readable medium encoded with a computer program,” to define the claimed invention more particularly, consistent with the Examiner’s helpful suggestions.

Applicants submit that the claimed invention of claims 3, 4, 8, 9, 11-15, 18, and 19 does not recite non-statutory subject matter. Applicants respectively request the Examiner to provide case law citation that “*reasonably interpreted*” claims 3, 4, 8, 9, 11-15, 18, and 19 are directed to non-statutory subject matter. These claims clearly describe a network in terms of components defined functionally. Applicants are not aware of any case law supporting the Examiner’s final statement that “*software, absent a structurally and functionally interrelated computer-readable medium, is not statutory subject matter*” and request the Examiner to provide a citation.

Therefore, Applicants respectively request the Examiner to reconsider and withdraw this rejection.

III. 35 U.S.C. 112, SECOND PARAGRAPH REJECTION

In rejecting claims 7-9, 11-15, 18-20, 22-2, 26-30, 33-35, 37-39, and 41-45, the Examiner alleges that the claims are indefinite for failing to particularly point out the invention.

Applicants amended the claims to define the claimed invention more particularly, consistent with the Examiner’s helpful suggestions.

Therefore, Applicants respectively request the Examiner to reconsider and withdraw this rejection.

IV. THE PRIOR ART REJECTIONS

A. The 802.1D specification and Williams rejection

In rejecting claims 3-9, 12, 13, 15, 18-24, 27, 28, 30, 33-39, 42, 43, and 45, the Examiner alleges that one of ordinary skill in the art would have combined the 802.1D specification with Williams to render obvious the claimed invention. Applicants respectfully submit, however, that the references would not have been combined as alleged by the

Examiner and that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention.

That is, the 802.1D specification and Williams do not teach or suggest, “*a MAC forwarding table memory which stores an output port for a destination MAC address and tag destination MAC address assigned by the learning frame management unit,*” (emphasis added by Applicants) as recited in claim 3, and similarly recited in claims 18 and 33.

The Examiner alleges that the 802.1D specification teaches the claimed MAC forwarding table. Specifically, the Examiner attempts to analogize the filtering database of 802.1D specification to the claimed MAC forwarding table (Office Action at page 5, lines 6-7).

The 802.1D specification, however, teaches that the alleged filtering database merely supports the creation, updating, and removal of dynamic filtering entries (section 7.9). Indeed, section 7.9, upon which the Examiner bases his rejection and Fig. 7-8 of the 802.1D specification teach that the system stores the destination port state information in a separate database than the alleged filtering database, as depicted in Fig. 7-9. Therefore the alleged filtering database does not store an output port for a destination MAC address, as claimed in the claimed invention. Therefore, the 802.1D specification fails to teach or suggest the claimed invention of claims 3, and similarly recited in claims 18 and 33.

Furthermore, the Examiner concedes that the 802.1D specification does not show that the MAC forwarding table stores an output port for tag. The Examiner alleges that Williams teaches the claimed tag operation (Office Action at page 5, lines 12-15).

Williams teaches the port to VLAN index table 601 that associates a VLAN with a given port (col. 10, lines 60-63; Fig. 6). Williams, however, fails to teach or suggest that the tag destination MAC address are assigned by a learning frame management unit, as recited in claim 3, and similarly recited in claims 18 and 33. Therefore, Williams fails to teach or suggest, “*a MAC forwarding table memory which stores an output port for a destination MAC address and tag destination MAC address assigned by the learning frame management unit,*” (emphasis added by Applicants) as recited in claim 3, and similarly recited in claims 18 and 33.

Furthermore, Applicants submit that one with ordinary skills in the art would not have combined the 802.1D specification with the teachings of Williams.

That is, Williams teaches a system for manipulating VLAN tags, whereas the 802.1D

specification discloses a learning frame management unit, which is not analogous art with respect to Williams.

The Examiner applies a circular reasoning argument and alleges that the references can be combined “*in order to provide the ability to tag a frame that is to be transmitted via a tagged port*” (Office Action at page 5, lines 16-19).

Applicants submit that adding the teachings of Williams to the learning frame management system of the 802.1D specification would change the principle of operation of the 802.1D specification, since the references teach two distinct systems that have different structures and are for different purposes.

Since the alleged combination of the 802.1D specification with the teachings of Williams would not result in reasonable expectation of success, the Examiner has not established *prima facie* case of obviousness. Therefore, one with ordinary skills in the art would not have combined the references, as alleged by the Examiner.

Moreover, in rejecting claims 15, 30, and 45, the Examiner alleges that one with ordinary skills in the art would have combined the 802.1D specification with Williams to render obvious the claimed invention. Applicants respectfully submit, however, that the references would not have been combined as alleged by the Examiner and that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention.

That is, the 802.1D specification and Williams do not teach or suggest, “*a node belonging to said network applies a learning function of Ethernet to an asymmetric flow by sending a learning frame through an opposite path to a path where a main signal frame flows*,” (emphasis added by Applicants) as recited in claim 15, and similarly recited in claims 30 and 45.

The Examiner conceded that the 802.1D specification fails to show an asymmetrical flow. The Examiner alleges that Williams teaches the claimed asymmetrical flow (Office Action at page 9, lines 1-4).

Williams teaches multipoint switch 12 that includes a media access control module 20 that transmits and receives data packets according to IEEE 802.3u protocol (col. 4, lines 17-25). Williams, however, is silent about, and fails to teach or suggest, “*a node belonging to said network applies a learning function of Ethernet to an asymmetric flow by sending a learning frame through an opposite path to a path where a main signal frame flows*,”

(emphasis added by Applicants) as recited in claim 15, and similarly recited in claims 30 and 45.

Furthermore, Applicants submit that one with ordinary skills in the art would not have combined the 802.1D specification with the teachings of Williams.

That is, Williams teaches a system for manipulating VLAN tags, whereas the 802.1D specification discloses a learning frame management unit, which is not analogous art with respect to Williams.

The Examiner applies a circular reasoning argument and alleges that the references can be combined “*in order to support multiple network speeds*” (Office Action at page 9, lines 5-7).

Applicants submit that adding the teachings of Williams, based on alleged asymmetric flow, to the learning frame management system of the 802.1D specification, which teaches a symmetric flow, would change the principle of operation of the 802.1D specification, since the references teach two distinct systems that have different structures and are for different purposes.

Since the alleged combination of the 802.1D specification with the teachings of Williams would not result in reasonable expectation of success, the Examiner has not established *prima facie* case of obviousness. Therefore, one with ordinary skills in the art would not have combined the references, as alleged by the Examiner.

Therefore, Applicants respectfully submit that, one with ordinary skills in the art would not have combined the 802.1D specification with Williams, and even if combined, the alleged combination does not teach or suggest (or render obvious) each and every feature of the claimed invention. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

B. The 802.1D specification, Williams, and Liu rejection

In rejecting claims 11, 14, 26, 29, 41, and 44, the Examiner alleges that one of ordinary skill in the art would have combined the 802.1D specification with Williams and Liu to render obvious the claimed invention. Applicants respectfully submit, however, that the references would not have been combined as alleged by the Examiner and that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention.

That is, the 802.1D specification and Williams, as set forth above in section A, do not teach or suggest, “*a MAC forwarding table memory which stores an output port for a destination MAC address and tag destination MAC address assigned by the learning frame management unit,*” (emphasis added by Applicants) as recited in independent claim 3, and similarly recited in independent claims 18 and 33.

Moreover, Applicants submit that Liu fails to make up the deficiencies of the 802.1D specification and Williams.

Indeed, Liu teaches a design model 11 that includes a lookup step 13 and a forwarding translation step 15 (paragraphs [0023] and [0024]. Liu, however, fails to teach or suggest “*a MAC forwarding table memory which stores an output port for a destination MAC address and tag destination MAC address assigned by the learning frame management unit,*” (emphasis added by Applicants) as recited in independent claim 3, and similarly recited in independent claims 18 and 33.

Indeed, the Examiner does not even allege that Liu teaches or suggests these features. The Examiner merely relies on Liu for allegedly teaching a broadcast table memory and a tag address management table (e.g., see. Office Action at page 10, lines 10-18).

Since Liu does not overcome the deficiencies of the 802.1D specification and Williams, the combination of references fails to render the rejected claims obvious.

Therefore, Applicants respectfully submit that, one with ordinary skills in the art would not have combined the 802.1D specification with Williams and Liu, and even if combined, the alleged combination does not teach or suggest (or render obvious) each and every feature of the claimed invention. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

V. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 3-9, 11-15, 18-24, 26-30, 33-39, and 41-45, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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